



US 20150133083A1

(19) **United States**

(12) **Patent Application Publication**
Van Phan et al.

(10) **Pub. No.: US 2015/0133083 A1**

(43) **Pub. Date: May 14, 2015**

(54) **FACILITATING PROXIMITY SERVICES**

(75) Inventors: **Vinh Van Phan**, Oulu (FI); **Ling Yu**,
Oulu (FI); **Kari Veikko Horneman**,
Oulu (FI)

(73) Assignee: **Nokia Solutions and Networks Oy**,
Espoo (FI)

(21) Appl. No.: **14/401,618**

(22) PCT Filed: **May 18, 2012**

(86) PCT No.: **PCT/EP2012/059309**

§ 371 (c)(1),
(2), (4) Date: **Nov. 17, 2014**

Publication Classification

(51) **Int. Cl.**
H04W 12/04 (2006.01)
H04W 76/02 (2006.01)
G06Q 30/02 (2006.01)
H04W 4/02 (2006.01)

(52) **U.S. Cl.**

CPC **H04W 12/04** (2013.01); **H04W 4/02**
(2013.01); **H04W 76/023** (2013.01); **G06Q**
30/0267 (2013.01)

(57)

ABSTRACT

There is provided a method, comprising: establishing, by a first network node, a communication connection to at least one advertising device located in a geographically limited service area; establishing a communication connection to at least one advertisement-receiving device; generating at least one security key for encrypting and decrypting at least part of the data which is to be transmitted in D2D communication links, wherein each security key is valid for a predetermined validity period, and common to those at least one advertising device and at least one advertisement-receiving device within the service area which fulfill predetermined criteria; causing transmission of information indicating the generated at least one security key to those at least one advertising device which fulfill the predetermined criteria; and causing transmission of information indicating at least one of the generated at least one security key to those at least one advertisement-receiving device which fulfill the predetermined criteria.

